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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/575,605	05/22/2000	Kornelis Antoine Schouhamer Immink	PHN-17.459	1475

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PHILIPS INTELLECTUAL PROPERTY & STANDARDS
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EXAMINER	
KUMAR, PANKAJ	

ART UNIT	PAPER NUMBER
2631	

DATE MAILED: 09/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/575,605	SCHOUHAMER IMMINK, KORNELIS ANTOINE	
	Examiner	Art Unit	
	Pankaj Kumar	2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 June 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-7,9-12,14 and 15* is/are rejected.

7)☒ Claim(s) *3,8 and 13* is/are objected to.

8)☒ Claim(s) *16-19* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 6/10/2004 have been fully considered but they are not persuasive. Applicant argues that Bauml teaches Au is complex and does not teach that Au is digital. This is not persuasive since fig. 4 in Bauml teaches discrete values and hence digital values (as analog values are not discrete) for Au. Also col. 4 lines 17-19 say: "The transmission sequence of complex values Au,p is favorably combined to form a vector Au"; hence Au is transmitted as shown in figures 1 and 3 of Bauml and Bauml's title includes "digital transmission"

2. Applicant also argues that Bauml does not disclose alternative sequences and instead discloses a block vector(s). Although Bauml discloses block vectors, applicant's arguments are not persuasive since Bauml discloses what is claimed by the applicant: a selection is made (Bauml col. 4 lines 39-40: "a favorable transmit signal au is finally selected") of the alternative digital sequence (Bauml col. 4 line 39: "from said U possibilities"; title includes "digital transmission") which has the lowest peak power (Bauml col. 5 lines 50-57: "transmit signal sequence au ... which among alternative transmit sequences has the lowest peak value").

3. Applicant's alternative sequence claim limitation is interpreted with respect to Bauml as being the alternative sequences au(1) to au(u) which go into SM in figure 1 of Bauml and then SM chooses the sequence to transmit which has the lowest peak value from the alternative sequences.

Response to Amendment

Election/Restrictions

4. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-15, drawn to developing signals for transmission to a receiver, classified in class 375, subclass 260.

II. Claims 16-19, drawn to recovering transmitted signals at the receiver, classified in class 375, subclass 316.

The inventions are distinct, each from the other because of the following reasons:

5. Inventions I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention I has separate utility such as transmission without necessarily using the receiver specified in claims 16-19. See MPEP § 806.05(d).

6. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Since claims 1-15 have already been examined in the prior action, new claims 16-19 are automatically restricted.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-2, 4-5, 6-7, 9-12, 14-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Bauml et al. USPN 6125103.

9. As per claim 1, Bauml teaches a transmission system for transmitting datawords via a multicarrier signal from a transmitter to a receiver, the transmitter comprising a generator for generating for each dataword (Bauml fig. 1: NR) ~~a number of~~ alternative digital sequences (Bauml fig. 1: output of mixers; au(1)...au(U); col. 4 line 39: "from said U possibilities"), and ~~the transmitter further comprising~~ a selector (Bauml fig. 1: SM; col. 4 lines 39-40: "a favorable transmit signal au is finally selected") for selecting an alternative digital sequence (Bauml col. 4 line 39: "from said U possibilities"; title includes "digital transmission") with a lowest peak power value (Bauml col. 5 lines 50-57: "transmit signal sequence au ... which among alternative transmit sequences has the lowest peak value") for transmission to the receiver (Bauml col. 5 lines 41-57, col. 6 lines 26-37; inherent for a transmitter to transmit to a receiver), wherein the generator is ~~embodied so as~~ operable to combine mutually different digital words (Bauml fig. 1: p(1)...p(U); col. 4 lines 28-29 "vectors P(u)...different from each other") with the dataword (Bauml fig. 1: serial/parallel conversions of NR are combined with p(1)...p(U)) ~~in order~~ to form the alternative digital sequences (Bauml fig. 1, 3: au(1)...au(U)).

10. As per claim 2, Bauml teaches a transmission system according to Claim 1, characterized in that the generator (20) comprises an augmentor (40) for generating ~~for each dataword (Bauml fig. 1: serial/parallel conversions of NR) (19) a number of~~ intermediate sequences (Bauml fig. 1:

output of mixers indicated with a circle around an x) (41) by combining the digital words (Bauml fig. 1: p(1)...p(U)) with the dataword (Bauml fig. 1: serial/parallel conversions of NR) (19), ~~the generator (20) further comprising~~ a scrambler (Bauml fig. 1: IDFT, differential modulation DM) (42) for scrambling the intermediate sequences (41) ~~in order~~ to form the alternative digital sequences (Bauml fig. 1: au(1)...au(U); col. 4 line 39: "from said U possibilities") (21).

11. As per claim 4, Bauml teaches a transmission system according to Claim 1, wherein ~~characterized in that~~ the generator comprises: a splitter for splitting the dataword and the digital words into fragments (Bauml fig. 1, 3: serial NR split into multiple parallel fragments) and~~, the generator (20) further comprising~~ a combiner for combining the fragments in order to form the alternative digital sequences (Bauml fig. 3: adder combining au(1) to au(V) after mixing with b1 to bV, respectively; NR is split into alternative sequences au).

12. As per claim 5, Bauml teaches a transmission system according to claim 1 wherein ~~characterized in that~~ the selector comprises an Inverse Discrete Fourier Transformer for calculating for each alternative digital sequence (Bauml fig. 1: output of mixers) the Inverse Discrete Fourier Transform (IDFT) (Bauml fig. 1: IDFT); ~~the selector (22) further comprising~~ means for determining for each alternative digital sequence the maximum of the calculated IDFT values (Bauml cols. 5-6 equations 1-3: max function), ~~the selector (22) also comprising~~ means for selecting the alternative sequence with a lowest maximum for transmission to the receiver (Bauml cols. 5-6 equations 1-3: argmin of max).

13. Claims 6-7, 9-12, 14-15 have been discussed above with respect to other claims.

Allowable Subject Matter

14. Claims 3, 8, 13 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The art of record does not suggest the respective claim combinations together and nor would the respective claim combinations be obvious with:

15. As per claim 3, a transmission system according to Claim 2, wherein the augmentor is operable to generate 2^r intermediate sequences by combining all possible digital words of length r with the dataword.

16. As per claim 8, a transmitter according to Claim 7, wherein the augmentor is operable to generate 2^r intermediate sequences by combining all possible digital words of length r with the dataword (19).

17. As per claim 13, a method of transmitting datawords via a multicarrier signal according to claim 12, wherein 2^r intermediate sequences are generated by combining all possible digital words of length r with the dataword.

Conclusion

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pankaj Kumar whose telephone number is (571) 272-3011. The examiner can normally be reached on Mon, Tues, Wed and Thurs 8AM to after 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad H. Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PK

M. G/

MOHAMMED GHAYOUR
SUPERVISORY PATENT EXAMINER